two investigators then combining their labours, followed up the subject, and have given us a memoir which will go down to posterity among the greatest achievements of an age renowned for its scientific activity.

The case in favour of argon being an element seems to be now settled by the discovery that the molecule of the gas is monatomic, as well as by the distinctness of its electric spark spectrum. The suggestion put forward soon after the discovery was announced, that the gas was an oxide of nitrogen, must have been made in complete ignorance of the methods by which it was prepared. The possibility of its being N_3 has been considered by the discoverers and rejected on very good grounds. Moreover, Peratoner and Oddo have been recently making some experiments in the laboratory of the University of Palermo with the object of examining the products of the electrolysis of hydrazoic acid and its salts. They obtained only ordinary nitrogen, not argon, and have come to the conclusion that the anhydride $N_3.N_3$ is incapable of existence, and that no allotropic form of nitrogen is given off. It has been urged that the physical evidence in support of the monatomic nature of the argon molecule, viz. the ratio of the specific heats, is capable of another interpretation—that argon is in fact an element of such extraordinary energy that its atoms cannot be separated, but are bound together as a rigid system which transmits the vibrational energy of a sound-wave as motion of translation only. If this be the state of affairs we must look to the physicists for more light. So far as chemistry is concerned, this conception introduces an entirely new set of ideas, and raises the question of the monatomic character of the mercury molecule which is in the same category with respect to the physical evidence. It seems unreasonable to invoke a special power of atomic linkage to explain the monatomic character of argon, and to refuse such a power in the case of other monatomic molecules, like mercury or cadmium. The chemical inertness of argon has been referred also to this same power of self-combination of its atoms. If this explanation be adopted it carries with it the admission that those elements of which the atoms composing the molecule are the more easily dissociated should be the more chemically active. The reverse appears to be the case if we bear in mind Victor Meyer's researches on the dissociation of the halogens, which prove that under the influence of heat the least active element, iodine, is the most easily dissociated. On the whole, the attempts to make out that argon is polyatomic by such forced hypotheses cannot at present be considered to have been successful, and the contention of the discoverers that its molecule is monatomic must be accepted as established.

In searching for a natural source of combined argon Prof. Ramsay was led to examine the gases contained in certain uranium and other minerals, and by steps which are now well known he has been able to isolate helium, a gas which was discovered by means of the spectroscope in the solar chromosphere during the eclipse of 1868 by Profs. Norman Lockyer and E. Frankland. In his address to the British Association in 1872 (*Reports*, 1872, p. lxxiv.) the late Dr. W. B. Carpenter said :—

> "But when Frankland and Lockyer, seeing in the spectrum of the yellow solar prominences a certain bright line not identifiable with that of any known terrestrial flame, attribute this to a hypothetical new substance which they propose to call helium, it is obvious that their assumption rests on a far less secure foundation, until it shall have received that verification which, in the case of Mr. Crookes' researches on thallium, was afforded by the actual discovery of the new metal, whose presence had been indicated to him by a line in the spectrum not attributable to any substance then known."

It must be as gratifying to Profs. Lockyer and Frankland as it is to the chemical world at large to know that helium may now be removed from the category of solar myths and enrolled among the elements of terrestrial matter. The sources, mode of isolation, and properties of this gas have been described in the papers recently published by Prof. Ramsay and his colleagues. Not the least interesting fact is the occurrence of helium and argon in meteoric iron from Virginia, as announced by Prof. Ramsay in July (NATURE, vol. lii. p. 224). Like argon, helium is monatomic and chemically inert so far as the present evidence goes. The conditions under which this element exists in cleveite, uraninite, and the other minerals have yet to be determined.

Taking a general survey of the results thus far obtained, it seems that two representatives of a new group of monatomic elements characterised by chemical inertness have been brought to light. Their inertness obviously interposes great difficulties in the way of their further study from the chemical side; the future development of our knowledge of these elements may be looked for from the physicist and spectroscopist. Prof. Ramsay has not yet succeeded in effecting a combination between argon or helium and any of the other chemical elements. M. Moissan finds that fluorine is without action on argon. M. Berthelot claims to have brought about a combination of argon with carbon disulphide and mercury, and with "the elements of benzene, . . . with the help of mercury," under the influence of the silent electric discharge. Some experiments which I made last spring with Mr. R. J. Strutt with argon and moist acetylene submitted to the electric discharge, both silent and disruptive, gave very little hope of a combination between argon and carbon being possible by this means. The coincidence of the helium yellow line with the D_3 line of the solar chromosphere has been challenged, but the recent accurate measurements of the wave-length of the chromospheric line by Prof. G. E. Hale, and of the line of terrestrial helium by Mr. Crookes, leave no doubt as to their identity. Both the solar and terrestrial lines have now been shown to be double. The isolation of helium has not only furnished another link proving community of matter, and, by inference, of origin between the earth and sun, but an extension of the work by Prof. Norman Lockyer, M. Deslandres, and Mr. Crookes, has resulted in the most interesting discovery that a large number of the lines in the chromospheric spectrum, as well as in certain stellar spectra, which had up to the present time found no counterparts in the spectra of terrestrial elements, can now be accounted for by the spectra of gases contained with helium in these rare minerals. The question now confronts us, Are these gases members of the same monatomic inert group as argon and helium? Whether, and by what mechanism, a monatomic gas can give a complicated spectrum is a physical question of supreme interest to chemists, and I hope that a discussion of this subject with our colleagues of Section A will be held during the present meeting. That mercury is capable under different conditions of giving a series of highly complex spectra can be seen from the memoir by J. M. Eder and E. Valenta, presented to the Imperial Academy of Sciences of Vienna in July 1894. With respect to the position of argon and helium in the periodic system of chemical elements, it is, as Prof. Ramsay points out, premature to speculate until we are quite sure that these gases are homogeneous. It is possible that they may be mixtures of monatomic gases, and in fact the spectroscope has already given an indication that they contain some constituent in common. The question whether these gases are mixtures or not presses for an immediate answer. I will venture to suggest that an attack should be made by the method of diffusion. If argon or helium were allowed to diffuse fractionally through a long porous plug into an exhausted vessel there might be some separation into gases of different densities, and showing modifications in their spectra, on the assumption that we are dealing with mixtures composed of molecules of different weights.

NOTES.

THE *Times* of Tuesday last contained a letter, signed by Profs. M. Foster, E. Ray Lankester, and G. B. Howes (Hon. Secretaries to the Provisional Committee), with reference to the General Committee now being formed for the purpose of establishing a memorial of the late Prof. Huxley. The letter states that H.R.H. the Prince of Wales has been pleased to become the Honorary President of the Committee. No very active steps can be taken until after the autumn recess, when the General Committee will hold its first meeting, probably in October. The Honorary Secretaries will after that report the progress that has been made both in this country and abroad, and a list of the complete Committee and a statement of the subscriptions received will be published. Appended to the letter is a list of an enormous number of names of persons who have already signified their desire to serve on the Committee.

A MEMORIAL tablet in honour of Prof. Helmholtz has been affixed to the house, No. 8 Haditzstrasse, at Potsdam, where he was born, and it is stated that it is intended to erect a joint monument to the memory of Werner Siemens and Helmholtz in front of the Technische Hochschule at Charlottenburg.

Prof. Retsius and Dr. Bergh, of Copenhagen, have been elected Correspondants of the Paris Academy.

The Berliner Akademie der Wissenschaften has, we understand, recently elected the following gentlemen as corresponding members:—Prof. W. V. Gümbel (Münich), Prof. A. von Zittell (Münich), Prof. A. Schrauf (Vienna), Prof. A. Cossa (Turin), Prof. A. Agassiz (Cambridge, Mass.), and Prof. E. Mascart (Paris).

The quinquennial International Metric Congress, which is at present being held in Paris, under the presidency of Dr. Marey, was opened on the 4th inst. by M. Hanotaux, who delivered a brief address. On the 6th inst. the second session of the Congress took place, and M. Hirsch, of the Neuchâtel Observatory, was elected Secretary. The Secretary presented the report of the Committee on the work already done, and the present state of the International Bureau of Weights and Measures, and a series of metric standards which have been under consideration since the Congress of 1889 was sanctioned.

The Swiss Naturforschende Gesellschaft has been holding its annual congress at Zermatt. The proceedings began on September 8, and concluded on the 11th. September 8 was devoted to the meetings of committees; the Sections met on September 10, and on the 9th and 11th inst. the general meetings took place.

The death is announced of Dr. Sven Lovén, the distinguished Swedish naturalist. He was born, says the *Times*, at Stockholm in 1809, and received his education at the University of Lund, where he took the degree of Doctor of Philosophy. After attending lectures in Berlin in 1830–31, he devoted himself to the study of the maritime fauna of the coasts of Scandinavia. He also explored the Baltic and the North Seas, and conducted the first scientific expedition to Spitzbergen in 1837. He was the author of numerous scientific memoirs, all published by the Royal Swedish Academy of Sciences. Dr. Lovén was elected a member of the Academy of Stockholm in 1840, and Professor and Conservator of the Royal Museum of Natural History of that city in 1841. He was a member of the academies of Berlin and Munich, a corresponding member of the Institute of France, and in 1885 was elected a foreign member of the Royal Society of London.

The death is recorded, at the age of eighty-one years, of Mr. James Carter, of Cambridge. For very many years Mr. Carter practised as a medical man, but found time to engage in the study of scientific and antiquarian subjects, and was especially interested in palæontology. He contributed many papers to the *Geological Magazine* and the *Quarterly Journal* of the Geological Society, and served for many years on the Councils of the Geological and Palæontological Societies.

The *Kew Bulletin* has heard with regret of the death from dysentery in May last of Mr. F. H. Smiles, who had been attached to the Royal Survey Department of Siam. Mr. Smiles, who had already done some good botanical work, returned to Siam in December last with the intention of making further botanical collections, and it was confidently anticipated that he would have added considerably to the knowledge of the rich flora of Upper Siam.

The death is announced of Mr. R. H. Tweddell, the well-known engineer; of Mr. E. F. C. Davis, president of the American Society of Mechanical Engineers; and of Mr. H. C. Hart, one of the first class technical officers of the engineer-in-chief's office, Post Office Telegraphs.

The centenary of Jenner's first experiments in vaccination is to be celebrated next May by the Russian National Health Society. To commemorate the event the Society proposes (1) to offer four prizes for the best works upon vaccination; (2) to collect and publish materials for a history of the practice of vaccination in Russia, and a short history of the same in Western Europe; (3) to publish a Russian translation of Jenner's works, accompanied by his biography and portrait; (4) to organise an exhibition of objects connected with vaccination; (5) to hold a commemorative meeting on the day of the centenary.

The annual joint meeting of the Swiss Geographical Societies will be held this year at St. Gall, on September 22 and 23. At this meeting a paper will be read by Dr. Hans Meyer on the "Snow Mountains of Equatorial Africa."

An exhibition of agricultural machinery, similar to that held in May of the present year, is being arranged under the auspices of the Imperial and Royal Agricultural Society of Vienna, to take place in that city in May 1896. The exhibits will comprise not only agricultural machines as generally understood, but appliances used in all branches of industry connected with agriculture, such as breweries, and distilleries, and yeast, sugar, vinegar, and starch factories.

We learn from the *Nation*, New York, that only one MS. was received in competition for the prize of 400 dollars given by Dr. Gould's *Astronomical Journal* "for the most thorough discussion of the theory of the rotation of the earth with reference to the recently discovered variations of latitude." The paper was sent by and the prize awarded to Prof. Newcomb. The other prize, of 200 dollars, was given to Mr. Paul S. Yendell, for the best series of determinations of maxima and minima of variable stars.

Science states that the Berliner Akademie der Wissenschaften has recently put aside over £1000 for the promotion of scientific work and research. Of this amount an appropriation of £100 has been made to Prof. Fuchs, of Berlin, to be devoted to the continuation of the publication of Dirichlet's works; £100 to Prof. Weierstrass, of Berlin, for the publication of his collected works; £75 to Prof. Gerhardt for the publication of the mathematical correspondence of Leibnitz, and £100 to Dr. Schauinsland for researches on the Fauna of the Pacific islands.

The Göttingen Gesellschaft der Wissenschaften will, on February 1, 1897, award a prize of 500 marks for an anatomical research and description of the cavities of the body of the new-born child and their contents compared with those of the adult.

The Academy of Sciences of Cracow proposes, as the subject for the Copernicus prizes, theories concerning the physical condition of the globe. Essays must be written in the Polish language, and reach the Academy before the end of 1898.

The Orient Steam Navigation Company, Limited, announce their intention of sending one of their steamships to Vadsö, Varanger Fiord, Lapland, in August next, to enable observations to be made of the total eclipse of the sun on August 9, 1896. It is arranged for the vessel to leave London on July 21, to arrive at Vadsö on August 3, and to return from the latter place on the 10th, reaching London on August 17. Particulars as to the cost, &c., of the trip may be seen in our advertisement columns, or obtained from Messrs. Anderson, Anderson, and Co., 5 Fenchurch Avenue, E.C., or 16 Cockspur Street, S.W.

Severe thunderstorms again occurred in the southern and eastern parts of England early on Saturday morning, 7th instant, accompanied with heavy falls of hail and rain, and causing considerable damage. The disturbance was occasioned by the development of shallow depressions over the Bay of Biscay and the English Channel, and by the intense heat over the continent, the maximum shade temperature in some parts of France being considerably above 90°, while in the east of England a temperature of 85° was recorded. Rainfall exceeded an inch in London and other places, and amounted to 1·78 inches in Hampshire. During the height of the storm the lightning flashes averaged about twenty-five to the minute.

THE Shetland County Council, says the *Glasgow Herald*, has resolved to apply to the Secretary for Scotland for an order under the Wild Birds Protection Act of 1894, prohibiting the taking of the eggs of certain wild birds. The schedule proposed includes such birds as the white-tailed or sea eagle, great skua, Richardson's skua, Allan whimbrel, ember goose, &c. All these birds have become extremely rare, and it is stated that there has been recently a trade carrying on in their eggs for the American market, to the threatened extinction of the birds.

WE are asked to announce that with the September number the *American Journal of Psychology* will enter upon its seventh volume. The preceding volumes have been edited by President G. Stanley Hall (Clark University). For the future the editorial responsibility of the *Journal* will be shared by President Hall, Prof. E. C. Sanford (Clark University), and Prof. E. B. Titchener (Cornell University). A co-operative board has been formed, which includes the names of Prof. F. Angell, Prof. H. Beaunis, Prof. J. Delboeuf, Dr. A. Kirschmann, Prof. O. Kuelpe, Dr. A. Waller, F.R.S., and Prof. H. K. Wolfe. The *Journal* will be devoted exclusively to the interests of experimental psychology (psychophysiology, psychophysics, physiological psychology, &c.). Each number will contain, as heretofore, original articles, reviews and abstracts of current psychological books and monographs, and notes upon topics of immediate psychological importance. Contributions may be addressed to either of the three editors.

Science states that the Board of Scientific Directors of the New York Botanic Garden has recently resolved to authorise a topographical survey of the 250 acres of land in Bronx Park which have been set aside for the uses of the garden. All the trees in the park are to be labelled, and new varieties of seeds desirable for cultivation are to be secured.

THE Allahabad *Pioneer Mail* says that an experiment is now in progress in several of the larger gaols of the Punjab, which may have important results in the future. It has been one of the ordinary precautions in time of cholera epidemics to boil the drinking water supplied to the prisoners. To ascertain whether it might not be advisable always to boil the drinking water, the Lieutenant-Governor has ordered that a certain number of the prisoners should be given boiled, and an equal number unboiled, water, the results being reported at the end of the year. If these are as expected, the reduction in the fever death-rate should be followed by a similar reduction in the mortality from dysentery and diarrhœa.

WE learn from *Engineering* that an important undertaking has been inaugurated at Seattle, in the State of Washington, U.S.A. This city is situated on Elliott Bay, a thoroughly sheltered harbour, which communicates with the Pacific by the Straits of San Juan de Fuca. About two miles from the coast and behind the town is a fresh-water lake of considerable size, the water level of which is about 16 feet above high water in the bay. A ship canal between the lake and the sea has long been suggested, and the work has at last been definitely commenced. The bottom of the channel will be 80 feet, and the greatest depth of cutting will be 308 feet. Almost the whole of the work will, however, be carried out through comparatively high land, the amount of excavation required being estimated at 36,000,000 cubic yards. The material is mostly glacial drift, and it is proposed to use hydraulic nozzles to facilitate the work of excavation, the spoil being washed down by a jet of water issuing at high pressure from a nozzle, as in some of the Californian gold workings. A lock 400 feet long will be constructed at the sea entrance to the canal. The material excavated will be used for raising the level of low-lying ground along the sea front of the city.

M. ZACHAREWIEZ, Professor of Agriculture at Vaucluse, has found by experiment with different-coloured glasses that fruit is finest and earliest when grown under clear glass. Orange glass produces an increase of vegetation, but at the cost of the amount of fruit, of the size and of its forwardness. Violet glass causes the number of fruit to increase at the expense of the quality. Red, blue, and green glass are hurtful to all kinds of vegetation.

THE possibility of successfully boring for water in extensive areas of crystalline rocks has been demonstrated, we learn from the September number of *Natural Science*, at several places in Sweden. The experiments were suggested by certain conclusions of Nordenskiöld, based on the downward limit of surface variations of temperature and other physical considerations. He considered that vertical jointing of the rocks would not extend below 30 or 40 metres, and that at that depth extensive horizontal fissures must be formed. This has now been found to be the case, and from these horizontal fissures abundant water of great purity has been obtained. While these results are of practical importance (particularly with regard to the water-supply of small rocky islands), it also opens up a number of interesting general questions as to the flow and pressure of water in crystalline rocks.

IN our issue for August 15, we printed an abstract of a paper on "The Voyage of the *Antarctic* to Victoria Land," read by Mr. C. E. Borchgrevink at the recent International Geographical Congress, and now have to acknowledge the receipt of the journal and notes of the commander of the whaler *Antarctic*, in which Mr. Borchgrevink made his somewhat unpropitious voyage as a sailor before the mast, which the Secretary of the Royal Geographical Society of Australasia (Victorian Branch) has been good enough to send us. The pamphlet, which contains some highly interesting matter, is accompanied by a lithographed map, by Captain Leonard Kristensen, of the track taken by his vessel, and forms part of the *Transactions* of the above-named Society.

Natural Science for September contains extracts from the address delivered by the Rev. Canon A. M. Norman, F.R.S., as President of the recently held Museums Association at Newcastle, and deals with the progress of biology in that northern town. An article on "The Geology of Ipswich and its Neighbourhood," by Mr. Clement Reid, appears at an opportune moment, and will doubtless be consulted by many geologists visiting the British Association. Other contributions to the number are:—"Some Recent Insect Literature," "The Nucleolus," "The Rôle of Sex," and "The Alleged Miocene Man in Burma." The last-named article has reference to a paper by Dr. Noetling, published towards the close of last year, "On the Occurrence of Chipped (?) Flints in the Upper Miocene of Burma." The writer, Mr. R. D. Oldham, says in conclusion, "till more complete evidence has been produced it is impossible to accept the existence of man in either Miocene or Pliocen times as one of the established facts of geology."

WE are glad to note the reappearance of the *Bollettino Mensuale* of the reorganised Italian Meteorological Society. The bulletin is issued in a more convenient, small folio form, but in other respects it is similar to the former publication. The current number contains two important articles by Prof. L. Di Marchi, on the causes of the glacial epoch, and the dynamical conditions of thunderstorms, and an investigation of the effects of the earthquake at Florence on May 18 last, by C. Bassani.

AN examination of the gases liberated from certain of the sulphurous waters of the Pyrenees reveals, in the hands of M. Ch. Bouchard, the interesting fact that the formerly assumed nitrogen (from which the Spanish physicians have named these waters *azoades*) consists in part of free argon and helium. The collected gas was in each case, after treatment with potash and phosphoric anhydride, introduced into a Plücker tube containing magnesium wire. Under the action of the silent discharge the nitrogen rapidly disappeared by combination with magnesium, leaving a residue exhibiting the characteristic rays of both argon and helium for the gas derived from the waters of la Raillère, helium from the springs of Bois, and helium together with probably an unknown gas from the waters of lowest temperature at Bois.

THE use of magnesium wire and the silent discharge is due to MM. L. Troost and L. Ouvrard, who show that the magnesium vapour produced very rapidly combines with nitrogen under the conditions obtaining in the tubes. Further, the continued action of a powerful silent discharge, for some hours after the spectroscopic evidence proves the absence of nitrogen, results in a gradual diminution in intensity of the helium and argon rays. Finally a complete vacuum is produced, hence it appears that magnesium combines with argon and helium under these circumstances. Platinum appears to behave like magnesium towards argon in Plücker tubes with the silent discharge.

THE additions to the Zoological Society's Gardens during the past week include a Bonnet Monkey (*Macacus sinicus*, ♀) from India, presented by Mrs. Ball; an Emu (*Dromæus novæ-hollandiæ*) from Australia, presented by Mr. C. W. Williams; a Raven (*Corvus corax*), British, presented by Mr. W. Weeker; a Royal Python (*Python reginis*) from Dahomey, West Africa, presented by Mr. C. H. Harley-Moseley; a Common Chameleon (*Chamæleon vulgaris*) from North Africa, presented by Mr. C. Sampson; a —— Snake (*Phrynonax eutropis*), a —— Snake (*Phrynonax fasciatus*) from Trinidad, presented by Mr. R. R. Mole; a White-tailed Sea Eagle (*Haliætus albieilla*) from Scotland, two Diamond Snakes (*Morelia spilotes*) from Australia, deposited; eight Amherst Pheasants (*Thaumalea amherstiæ*), six Ring-necked Pheasants (*Phasianus torquatus*), two Japanese Pheasants (*Phasianus versicolor*), a Temminck's Tragopan (*Ceriornis temmincki*), bred in the Gardens.

OUR ASTRONOMICAL COLUMN.

THE PROPER MOTION OF THE SUN.—In the September number of the *Bulletin Astronomique* M. Tisserand gives an interesting account of a method of determining the proper motion of the sun from stellar proper motions. Denoting by m and m' the values of the annual proper motions of the stars, c the space described by the sun in one year, this space being measured with the same unit as the distance (ρ) of the sun, and A and D the Right Ascension and Declination of the apex of the sun's way, the formulæ for reduction become

$$m \cos \delta = \frac{c}{\rho} \cos \mathrm{D} \sin (\alpha - \mathrm{A})$$

$$\frac{m'}{\cos \delta} = -\frac{c}{\rho} \sin \mathrm{D} + \frac{c}{\rho} \cos \mathrm{D} \tan \delta \, . \cos (\alpha - \mathrm{A}).$$

In the second equation the second term changes its sign with $\tan \delta$, ρ changes its value from star to star. Assuming that the mean of the values of this term will be small or zero, and that Σ represents the arithmetical mean, we have—

$$\Sigma\left(\frac{m'}{\cos \delta}\right) = -c \sin \mathrm{D} \, \Sigma\left(\frac{1}{\rho}\right).$$

Now, because sin D is positive, the mean values of the left-hand side of the equation ought to be negative. If there were no proper motion to the sun, they should be zero.

Using the catalogue of 1054 stellar proper motions, motions of M. Stumpe (*Astr. Nach.*, Nos. 2999-3000, year 1890), only those stars have been employed the declinations of which are comprised between − 30° and + 30°, and the proper motions less than 0″·64.

The mean values for the sum above were then tabulated for every hour of Right Ascension. These were found to be all negative, as they ought to be, and they did not differ very much from one another. For 585 stars the mean value was − 0″·151.

M. Tisserand further investigated the values obtained from another catalogue of 2641 stellar proper motions, by M. Bossert, in exactly the same way. Here the mean values were still found all to be negative, and not very different from one another. From 1537 proper motions the value obtained was − 0″·131.

By taking only the proper motions of stars comprised between declinations ± 15°, the value obtained does not differ materially from that given above. In the interval then of a century, for each hour of right ascension, the declinations of all the stars have diminished (in the mean) by quantities comprised between 10″ and 20″; and he says, "il nous semble que cela donne une preuve materielle frappante du mouvement du Soleil."

THE ROTATION OF VENUS.—A difficult problem in observational astronomy is the determination of the period of the rotation of Venus. M. Schiaparelli, whose powers of observations have been often put to the test, still thinks that the planet accomplishes one rotation in the same time that it takes to travel round the sun, or, in other words, the same hemisphere is always turned towards the sun. M. Leo Brunner, however, who has made during three months a great number of drawings, which appear to corroborate his statement, seems to be of quite a different opinion, for he says: "J'ai le plaisir de vous annoncer que je viens de découvrir la vraie période de rotation de Venus, qui ne diffère que de quelques minutes de celle de notre terre. Cette découverte est hors doute, car j'ai pu voir arriver et passer des taches plusieurs jours avec la plus grande distinction. Nul doute à cet egard." It must not be forgotten, however, that the observation of Venus is one attended by great difficulty. Even Brunner's drawings and those of Schiaparelli made of the planet at the same time are very different. There seems to be no doubt that the observations are all verging on the limit of visibility, and that the 224 days or the 24-hour period are just as probable as ever.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—The following appointments have been recently made by the governing bodies of the undermentioned colleges:—At St. John's, Mr. R. H. Adie, a Lecturer in Natural Science; at Magdalene, Mr. G. T. Manley, Lecturer in Mathematics; at Trinity, Mr. G. T. Walker, Lecturer in Mathematics, and Messrs. W. C. D. Whetham and J. W. Capstick, Lecturers in Natural Science; at Emmanuel, Mr. A. Eicholz, Lecturer in Natural Science; at Sidney Sussex, Mr. R. H. D. Mayall, Lecturer in Mathematics; at Selwyn, Mr. L. A. Borradaile, Lecturer in Natural Science.

ACCORDING to *Science*, Prof. Bonnet, Professor of Anatomy in the University of Giessen, has received a call to Greifswald; and Dr. M. Miyoshi has been appointed Professor of Botany in the University of Tokyo.

MR. CHAS. BERRY, horticultural lecturer to the East Suffolk County Council Technical Instruction Committee, has been appointed Instructor in Horticulture by the Devonshire County Council, and will enter upon his duties at the end of September.

THE prospectus of Day and Evening Classes at the Battersea Polytechnic Institute for the session 1895-6, has reached us, and contains full information respecting the numerous classes held at this well-appointed institution. Several new classes are to be formed, and special provision is made for the needs of students who are desirous of entering for the examination of London University, from the matriculation to the final B.Sc.

THE fourth annual report (1894-5) of the Department of Agriculture, Yorkshire College, Leeds, has been published, and shows clearly that a great deal of useful work has been carried on during the past twelve months, and has, on the whole, met with very satisfactory success. With one exception (that of the classes for elementary teachers) each branch has exhibited much growth. The lectures given to farmers and others were